

DOCKET NO.: AMDL-0050

PATENT

Application No.: 10/520,965

Office Action Dated: September 14, 2009

Amendments to the Drawings

The attached sheet(s) of drawings includes changes to Fig. 1. The sheet(s), which includes Fig. 1, replaces the original sheet(s) including Fig. 1.

Attachment: Replacement Sheet(s) – Fig. 1

REMARKS

Status of Claims

Claims 1, 7, 13, 16-18, 21, 26, 28, 30, 32, 34, and 39 have been amended. The features of claims 14 and 15 have added to claim 1 and claims 14 and 15 have been canceled. Claims 7 and 13 have been placed in independent form. Claims 16 and 17 have been amended to depend from claim 1, and claim 17 has been amended to address the rejection under 35 U.S.C. §112, second paragraph. Claim 18 has been amended to recite the stimulator of claim 21, and claim 21 has been amended for consistency with claim 18. Non-elected claims 26, 28, 30, 32, 34, and 39 have been amended for clarity and consistency with the elected claims. No claims and no new matter have been added. Upon entry of the above amendments, claims 1-13 and 16-40 will remain in the application, although claims 8, 23, and 26-40 are withdrawn as directed to non-elected species.

Response to Elections/Restrictions

The Examiner has required Applicants to elect a single invention to which the claims must be restricted under 35 U.S.C. §§121 and 372. In particular, the Examiner has required Applicants to elect the force sensor device of claims 1-33 (Invention I); the foot stimulation method of claims 34-38 (Invention II); or the stimulation method of claims 39-40 (Invention III).

Although Applicants disagree with the restriction requirement as issued in error, in order to advance prosecution **Applicants hereby elect Invention I (claims 1-33) for further examination.** Applicants reserve the right to challenge the restriction and/or to amend method claims 34-40 in order to maintain those claims in the present application.

The Examiner has also issued an election of species requirement and required an election among species A1: foot stimulation system, species A2: palm force sensor, and Species A3 (knee stimulation system). **Applicant hereby elects species A1, of claims 18-25 and Figures 2A-C.**

The Examiner has further issued an election of species requirement and required an election among species B1: concentric circles of elliptical welds and species B2: parallel rows of elliptical welds. **Applicant hereby elects species B1, of claim 7 and Figures 2A-B.**

Finally, the Examiner has issued an election of species requirement and required an election among species C1: stimulation proportional to the pressure measurement and species C2: stimulation is a constant preselected by the user. **Applicant hereby elects species C1, of claim 22.**

Claims 1-17 are generic to species A1-A3; claims 1-6 and 9-25 are generic to species B1-B2; and claims 1-21 and 24-25 are generic to species C1-C2. Claims 8, 23, and 26-40 are withdrawn from consideration as directed to either a non-elected invention (claims 34-40) or a non-elected species (claims 8, 23, and 26-33). Applicant requests rejoinder of these claims, as appropriate, upon indication of allowable generic claims.

Priority

Applicants note the Examiner's indication that a certified copy of the international application has not been received. Applicants are investigating this matter and will submit a certified copy of the international application prior to issuance.

Declaration

The declaration stands objected to as defective for allegedly not identifying the application by correct application number and filing date. Applicants are investigating this matter and will submit a corrected declaration, as appropriate, prior to issuance.

Drawings

The drawings are objected to because reference character 100 is not shown in Figure 1. Figure 1 has been amended to include reference character 100. A corrected drawing sheet for Figure 1 is attached hereto. Withdrawal of the objection to the drawings is requested.

Claim Rejections – 35 U.S.C. §112, Second Paragraph

Claim 17 stands rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite regarding how the electrical stimulation system would be used to identify the specific stages of the gait cycle. Applicants have amended claim 17 as suggested by the Examiner in order to remove any ambiguities. Withdrawal of the indefiniteness rejection of claim 17 is solicited.

Claim Rejections – 35 U.S.C. §102(b)

Claims 1, 3, 10, 14-16, 18, and 20 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,005,140 ("Havriluk"). As noted above, claims 14 and 15 have been canceled, thereby obviating the rejections with respect to claims 14 and 15.

Independent claims 1 and 18, as amended, as believed to patentably distinguish over Havriluk for the reasons to follow.

Havriluk discloses a method and a device for monitoring and measuring underwater physical therapy or exercise employing hydrodynamic elements or aquatic exercise devices. Havriluk does not monitor weight bearing during different ambulatory functions. On the contrary, Havriluk measures aquatic exercise during physical therapy or an exercise time period and calculates an area under the curve as a measurement of the physical therapy performed. In contrast, the claimed force sensor system measures “weight bearing on the location” by measuring body weight (ground reaction forces), gait pattern, quality of gait, smoothness of the gait, stance and swing relations, velocity, cadence, and the like through a full gait analysis. Havriluk provides no such teachings. Thus, contrary to the Examiner’s allegations with respect to claims 14-15, Havriluk provides no teachings of pressure sensors that convert received pressure signals to “electrical output signals representative of the weight bearing on the location” as claimed in amended independent claims 1 and 18.

Moreover, while Havriluk converts the measurement signal into a digital signal for evaluation by a digital computer, Havriluk provides no further explanation as to how one would transform the measurement signal into data that is indicative of weight bearing on a location of the patient’s body. All measurements by the claimed force sensor system are based on converting the digital signal to pounds or percent body weight by a look up table that has been built into the system based on human foot measurement using the claimed force sensor system on a force plate from 0-250 pounds on each air pocket during standing up, standing, walking, and climbing stairs. No biofeedback for limiting weight bearing or enhancing weight bearing is taught by Havriluk as Havriluk provides no gait analysis capabilities or suggests the desirability of same to enable the claimed weight bearing determination by the pressure sensors. Furthermore, if Havriluk contemplated measuring different elements under the water in addition to time (area under the curve), then water level should be mentioned as it impacts the body weight and would need to be known to get a reliable measurement of weight. Havriluk provides no such teachings.

For at least these reasons, withdrawal of the rejections of claims 1 and 18 as being anticipated by Havriluk is appropriate and is respectfully solicited. As claims 3, 10, and 16 depend from claim 1 and claim 20 depends from claim 18, these claims are believed to be

allowable at least by virtue of their dependencies upon claims 1 and 18, respectively.

Withdrawal of the rejection of claims 1, 3, 10, 14-16, 18, and 20 is respectfully solicited.

Claims 1-3 and 11 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4,989,615 (“Hochberg”). As noted above, claim 1 has been amended to include the features of claims 14 and 15, thereby obviating this anticipation rejection of claims 1-3 and 11 over Hochberg. Withdrawal of the rejection of claims 1-3 and 11 is respectfully solicited.

Claim Rejections – 35 U.S.C. §103

Claim 12 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over Hochberg. As claim 12 depends from claim 1, which is allowable over Hochberg for at least the reasons noted above, the rejection of claim 12 is traversed as depending from allowable claim 1. Withdrawal of the rejection of claim 12 is respectfully solicited.

Claim 19 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over Havriluk in view of Hochberg. As claim 19 depends from claim 18, which is allowable over Havriluk and Hochberg for the reasons noted above, the rejection of claim 19 is traversed as depending from allowable claim 18. Applicant further notes that neither Havriluk nor Hochberg teaches a force sensor system that measures “weight bearing on the location” as claimed. As noted above, Havriluk does not monitor weight bearing. Hochberg also does not monitor weight bearing but instead monitors uterine contractions and measures changes in fluid pressure that indicate the presence of uterine activity. Accordingly, even if the teachings of Havriluk and Hochberg could have been combined by one skilled in the art as the Examiner alleges, the claimed foot sensor system for use in control of an electronic orthosis would not have resulted. Withdrawal of the rejection of claim 19 is respectfully solicited.

Claims 4, 5, and 9 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over Havriluk in view of Toms. Claim 1 distinguishes over Havriluk in that Havriluk does not teach monitoring weight bearing as claimed. As claims 4, 5, and 9 depend from claim 1, these claims are believed to be allowable over Havriluk at least by virtue of their dependencies from allowable claim 1. As Toms is cited for purported teachings of a flexible pouch having two outer layers of fabric sheets comprising a fabric

base and a polyurethane coating, where the outer layers of sheets are welded together in a welding pattern using an RF-weld sealing agent, Toms is not believed to be particularly relevant to the missing weight bearing measurement features of claim 1. In other words, neither Havriluk nor Toms teaches a force sensor system that measures “weight bearing on the location” as claimed. Accordingly, even if the teachings of Havriluk and Toms could have been combined by one skilled in the art as the Examiner alleges, the claimed force sensor system for monitoring weight bearing would not have resulted. Withdrawal of the rejection of claims 4, 5, and 9 is respectfully solicited.

Claim 6 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over Havriluk and Toms in view of US Pub. No. 2003/0036771 (“McEwen”). Claim 4 distinguishes over Havriluk and Toms as noted above. As claim 6 depends from claim 4, claim 6 is believed to be allowable over Havriluk and Toms at least by virtue of its dependency from allowable claim 4. As McEwen is cited for purported teachings of a gas filled bladder formed from polyester fabric with a polyvinylchloride coating, McEwen is not believed to be particularly relevant to the missing monitoring of weight bearing features of claim 4. Thus, Havriluk, Toms, and McEwen, even if combinable by one skilled in the art as the Examiner alleges, would not have taught or suggested a force sensor system that measures “weight bearing on the location” as claimed. Accordingly, even if the teachings of Havriluk, Toms, and McEwen could have been combined by one skilled in the art as the Examiner alleges, the claimed force sensor system for monitoring weight bearing would not have resulted. Withdrawal of the rejection of claim 6 is respectfully solicited.

Claims 15, 17, 21, and 22 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over Havriluk in view of US Pat. No. 5,775,332 (“Goldman”). Claim 15 has been canceled, thereby obviating this rejection with respect to claim 15. Claims 1 and 18 distinguish over Havriluk as noted above. As claim 17 depends from claim 1 and claims 21 and 22 depend from claim 18, claims 17, 21, and 22 are believed to be allowable over Havriluk at least by virtue of their dependencies from allowable claims 1 and 18. The Examiner alleges that Goldman discloses a weight sensing device with an electronic module that provides electrical stimulation and that it would have been obvious to one skilled in the art to provide the output signals of Havriluk to a stimulation system as taught by Goldberg. Applicant respectfully disagrees. As noted above, Havriluk does not measure weight bearing

and certainly provides no teaching for providing stimulation in response to weight bearing measurements. Thus, even if the teachings of Havriluk and Goldman would have been combinable by one skilled in the art as the Examiner alleges, the combined teachings would not have taught or suggested a force sensor system or a foot stimulation system that measures “weight bearing on the location” and provides responsive stimulation as claimed. Accordingly, even if the teachings of Havriluk and Goldman could have been combined by one skilled in the art as the Examiner alleges, the claimed force sensor system for monitoring weight bearing or the claimed foot sensor system for use in control of an electronic orthosis would not have resulted. Withdrawal of the rejection of claims 15, 17, 21, and 22 is respectfully solicited.

Finally, claims 24 and 25 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over Havriluk and Goldman in view of US Pat. No. 3,881,496 (“Vredembregt”). Claim 21 distinguishes over Havriluk and Goldman as noted above. As claims 24 and 25 depend from claim 21 and claim 21 depends from claim 18, claims 24 and 25 are believed to be allowable over Havriluk and Goldman at least by virtue of their dependencies from allowable claims 18 and 21. The Examiner alleges that Vredembregt discloses electrical stimulation of particular muscle groups for ambulation and that it would have been obvious to one skilled in the art from such teachings to stimulate the anterior and posterior muscles of the tibia in a stimulation system as taught by Havriluk and Goldberg. Applicant respectfully disagrees. As noted above, Havriluk does not measure weight bearing and certainly provides no teaching for providing stimulation in response to weight bearing measurements. Thus, even if the teachings of Havriluk, Goldman, and Vredembregt would have been combinable by one skilled in the art as the Examiner alleges, the combined teachings would not have taught or suggested a foot stimulation system that measures “weight bearing on the location” and responsive stimulation as claimed. Accordingly, even if the teachings of Havriluk, Goldman, and Vredembregt could have been combined by one skilled in the art as the Examiner alleges, the claimed foot sensor system for use in control of an electronic orthosis would not have resulted. Withdrawal of the rejection of claims 24 and 25 is respectfully solicited.

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For at least the reasons provided above, claims 1-6, 9-12, and 16-22, 24, and 25 are believed to be in condition for allowance. Withdrawal of all rejections of these claims is solicited.

Allowable Subject Matter

Applicant appreciates the Examiner's indication that the subject matter of claims 7 and 13 is allowable over the prior art. Claims 7 and 13 have been placed in independent form to facilitate allowance. Allowance of claims 7 and 13 is solicited.

Conclusion

For at least the reasons provided in detail above, claims 1-7, 9-13, 16-22, 24, and 25 are believed to be in condition for allowance. Allowance of these claims and rejoinder and allowance of claims 8, 23, and 26-30 are solicited.

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